Learning design to support student-AI collaboration: perspectives of leading teachers for AI in education

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Abstract

Preparing students to collaborate with AI remains a challenging goal. As AI technologies are new to K-12 schools, there is a lack of studies that inform how to design learning when AI is introduced as a collaborative learning agent to classrooms. The present study, therefore, aimed to explore teachers' perspectives on what (1) curriculum design, (2) student-AI interaction, and (3) learning environments are required to design student-AI collaboration (SAC) in learning and (4) how SAC would evolve. Through in-depth interviews with 10 Korean leading teachers in AI in Education (AIED), the study found that teachers perceived capacity and subject-matter knowledge building as the optimal learning goals for SAC. SAC can be facilitated through interdisciplinary learning, authentic problem solving, and creative tasks in tandem with process-oriented assessment and collaboration performance assessment. While teachers expressed instruction on AI principles, data literacy, error analysis, AI ethics, and AI experiences in daily life were crucial support, AI needs to offer an instructional scaffolding and possess attributes as a learning mate to enhance student-AI interaction. In addition, teachers highlighted systematic AIED policy, flexible school system, the culture of collaborative learning, and a safe to fail environment are significant. Teachers further anticipated students would develop collaboration with AI through three stages: (1) learn about AI, (2) learn from AI, and (3) learn together. These findings can provide a more holistic understanding of the AIED and implications for the educational policies, educational AI design as well as instructional design that are aimed at enhancing SAC in learning.